

**Environment Canada
National Consultation on the
Atmospheric Environment Program**

**Final Report
August 14, 1998**

PRICEWATERHOUSECOOPERS 

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Atmospheric Environment Program**

Final Report

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Executive Summary

An Alternative Service Delivery (ASD) study of the Atmospheric Environment Program (AEP) was initiated in April 1997. As part of this initiative, Environment Canada undertook a national consultation on the AEP in the spring of 1998. Sessions were held with several concerned stakeholders including Environment Canada's own staff, private sector meteorological firms, media, other government departments and agencies, the general public; and unions.

The common themes that emerged from the national consultation sessions are highlighted below, summarized into four major headings: AEP's importance as a national program; program mandate and role; optimal program funding strategies; and required program characteristics. It is important to note that in many areas, individuals had competing points of view. Readers are encouraged to refer to the main body of the report for more detailed information on these differences of opinion.

AEP's Importance as a National Program

All stakeholders consulted during this exercise emphasized the ongoing importance of the program. They felt that the AEP continues to play an important role in the quality of life that Canadians enjoy and indicated that, due to the nature of its services, it was well situated as a federal program. While some session participants felt that the AEP could better coordinate its services with others to avoid duplication of effort, expanding Program requirements were identified in areas such as health related services.

Many stakeholders expressed the opinion that the Program had become increasingly fragmented in its approach to service delivery over the last four to five years. This was supported by examples of regional pricing discrepancies of a particular product, regional service level variances and multiple points of contact for services required in more than one province. There was a strong feeling that, while some flexibilities were required, the AEP should be managed in a consistent and coherent manner from coast to coast to coast.

Program Mandate and Role

Participants endorsed the need for a clear mandate for the AEP. A majority of participants favoured a legislated approach, provided that it is sufficiently flexible to enable the AEP to adapt to new issues and requirements. As one

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participant stated, without legislation, "you respond to the winds and the waves like a captain without a compass."

A number of characteristics were suggested for a renewed mandate. These included definition of the public good focus and responsibilities of the AEP, and clarification of the AEP's commercial involvement.

Public Good Services

Participants were virtually unanimous in stating that the provision of services for the public good should be the AEP's primary focus. As was stated by one staff session participant, "there is a need to maintain a strong, non-commercial science industry, funded by and responsible to the public good. Not all that is beneficial for individuals can be bought and sold."

Session participants endorsed several public good roles including AEP leadership in atmospheric, water and ice data collection, quality assurance, archiving and access. As one general session participant stated, "the data collection and ready availability [of the data] is the most critical part of your service - [it] must be maintained." There was also a lot of discussion around the need for a single, integrated national data bank.

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Many participants also saw the provision of quality forecasts to the public as an essential requirement. A need was expressed for both short-term and extended forecasts, including long-range seasonal climate predictions. The majority of participants also felt that the AEP should issue warnings of hazardous weather. It was felt that timely dissemination methods, such as weather radio, were essential for the safety and well being of the public.

Another identified requirement was scientific policy expertise and research support. A special need was mentioned for real-time consultation with a live person during emergency situations.

Many participants felt the AEP should establish national quality standards for atmospheric, water and ice data and related services. Some participants suggested that the AEP should restrict its involvement in data monitoring to setting and enforcing standards, allowing others to actually collect the data. As

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one provincial session participant stated, "You don't have to do everything but you need to maintain responsibility and accountability for what you are doing."

Several participants saw a need for the AEP to represent Canadian interests in appropriate international activities and programs. Academic participants, in particular, highlighted the importance of these international linkages for the advancement of atmospheric and hydrologic science.

Commercial Services

Selective AEP commercial activity was felt to be acceptable by a broad spectrum of participants, but very strong opposition to such activity was expressed by meteorological private sector participants and by some provincial government, AEP staff and federal department participants.

Optimal Program Funding Strategies

Session participants indicated that public good services should be fully supported by tax based revenues. Many participants felt that the AEP tax-based funding had been cut too much already, and that any further cuts would be detrimental to the Canadian public. One participant stated, "There is a terrible irony that just now, after we have signed the Kyoto Protocol...after the floods and the ice storm and the ominous signs of drought on the Prairies this summer, we're here trying to deal with the slashing of our national weather and climate service."

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A broadly held view expressed in the various sessions was that should the AEP continue to pursue commercial activities it should do so on a fully costed basis. Participants were strongly opposed to any commercial activity being subsidized by tax based funding.

Participants also supported the expansion of partnerships and alliances as an effective approach to reduce costs and related funding. Many participants cautioned, however, that partnerships should not be used as a way to reduce service levels.

Required Program Characteristics

Participants identified a number of desirable characteristics and flexibilities that the Program should exhibit in the future. Examples of these included: a coherent national program; a clear mandate; a strong scientific base; financial flexibility; an ability to partner effectively; staffing and compensation flexibilities; and client responsiveness.

Program visibility was another important Program characteristic identified by several participants, most notably staff and the general public. Low public awareness was seen to be a contributing factor to many of the AEP's most pressing problems, including inadequate funding levels.

1 Background

Environment Canada's Atmospheric Environment Program (AEP) has been one of the cornerstones of Canadian public service for over a century, providing scientific information and predictions on weather, climate, ice, air quality and, more recently, water. These services play an important role in helping Canadians and their governments to make informed decisions with respect to health, safety, environment, and economic and business endeavours.

The time has come for Environment Canada to evaluate the delivery of the Atmospheric Environment Program. The significant pressures associated with evolving client and citizen needs, keeping pace with scientific know-how and technological change, advancing research, and today's financial realities are challenging the long-term sustainability of the Program. It is recognized that changes need to be considered to renew and strengthen the AEP so that it can continue to deliver quality services to Canadians.

In April 1997, an Alternative Service Delivery (ASD) study of the AEP was initiated to address the challenges facing the Program. This study was to analyse the various aspects of the Program including its relationships with employees, clients, partners and the general public, as well as its mandate, financial sustainability, human resource management, and organizational form.

A significant focus of the ASD study involved soliciting the views of concerned Canadians. National consultation sessions were held across Canada in the spring of 1998, in order for Environment Canada to share its concerns and goals, listen to ideas, and work with Canadians to develop a vision of the future AEP.

The information acquired through the consultation process, combined with information obtained through other facets of the ASD study, were collected to help inform senior decision makers so that they can determine the optimal approach to dealing with the many issues facing the Atmospheric Environment Program.

2 Objective

Several groups have a "stake" in the outcomes of the ASD study. This includes Environment Canada's own staff, private sector meteorological firms, media, other private sector firms, research partners, academia, municipalities, provinces, territories, other government departments (OGDs) and agencies, and unions. National workshop sessions with these stakeholders were initiated to meet the following objectives:

- establishing a two-way flow of information with the stakeholders;
- educating stakeholders on the significant issues the program needs to address;
- providing stakeholders with the opportunity to influence decisions; and
- encouraging a wide understanding of the various, and sometimes conflicting, views held by the various stakeholders and stakeholder groups.

National focus group sessions with members of the general public were also held in various major centres across Canada. The objectives of these sessions were slightly different and included:

- identifying the importance of, and needs for, weather information;
- gauging perceptions regarding the role of the federal government in relation to weather information, and reaction to private sector involvement (including willingness to pay for weather information);
- assessing views regarding the AEP's involvement in the marketplace; and
- identifying mechanisms or alternatives to improve AEP programs and services.

Having accomplished these objectives, senior decision-makers should be better positioned to confidently evaluate program needs and requirements and implement the changes required to ensure the ongoing health of the AEP.

It is important to note that the sole deliverable of the national consultation exercise was the objective documentation of stakeholder views expressed in the various sessions across the country as well as through written submissions. As such, the purpose of the consultation sessions was to listen to stakeholder views, not challenge them.

3 Approach

This section describes the approach and methodology to the consultation, and the specific tasks carried out in completing the consultation process.

Selected an objective facilitator

Environment Canada identified the need to conduct a national consultation very early in the ASD process. In order to ensure that the consultation process was well managed and that the views expressed by stakeholders were objectively documented, Environment Canada selected Price Waterhouse in November 1997 to co-ordinate and facilitate the consultation process as an independent third party.

Identified issues and gauged participation

In advance of the consultation process, Environment Canada prepared a background discussion paper entitled "Towards a Renewed Atmospheric Environment Program for Canada". This paper, at a high level, described many of the issues that the AEP was grappling with and included a brief questionnaire. The paper was distributed in November 1997 and several detailed responses were received from individuals and organizations. These responses revealed stakeholders' "top-of-mind" issues and helped focus the discussion questions to be used in the national consultation sessions.

Through the questionnaire, respondents were asked to indicate whether they would be interested in attending the formal sessions and to help identify other individuals and organizations that might have an interest in the consultation exercise. Respondents also identified additional information that they required in order to effectively contribute to the process.

Organized the sessions and provided background material

A decision was made to conduct five types of formal consultation sessions: general; provincial/territorial; OGD; staff; and public. The first four types of sessions listed were managed as workshops while the public sessions were managed as focus groups.

In order to ensure the various sessions were focused and productive it was important to provide the stakeholders with additional information and to identify in advance the questions to be discussed. As a result a second, more detailed, discussion paper entitled "Renewing Environment Canada's Atmospheric

Environment Program" was produced and distributed in March 1998. This paper served as the formal invitation mechanism for the national consultation. Details on the session locations and attendance can be found in **Appendix A**.

Prior to conducting the sessions the consultation teams were assembled and oriented. The teams were comprised of regional Environment Canada representatives who acted as session "hosts" and provided local knowledge, ASD study team members that conducted the introductory information presentations and assisted in session recording, and the Price Waterhouse professionals who managed the session and facilitated the breakout groups.

Conducted the sessions

While there were minor variations in the approach, the first session held at a given location was usually a half-day staff session. This allowed the team to become more knowledgeable of the local issues and ensured that the staff were aware of the formal consultation sessions that were being conducted with external stakeholders in their area. The second session typically was a half-day provincial/territorial session. The third session was usually a full-day general meeting. The general sessions required more time for discussion due to the number of competing views held by the various participants. The public focus groups were held in the evenings so that the participants that worked during the day had the opportunity to attend. All of the OGD sessions were held in the National Capital Region (i.e., Ottawa and Hull).

Breakout groups were formed in the larger workshops (generally, sessions with 10 participants or more) to ensure that everyone attending had an opportunity to contribute meaningfully. In these sessions, a plenary was held at the end of the day in order to provide the various breakout groups an opportunity to present summaries of their discussions to all session participants. This helped ensure that all participants were aware of the issues discussed and allowed the facilitators to validate their understanding of the discussion within their groups.

The participants were asked questions that closely reflected those found in the second discussion paper.

External stakeholders were asked:

1. What programs, services or science activities are most important for the AEP to deliver in the future?
2. What programs, services or science activities no longer warrant significant effort by the AEP in the future?
3. What is the right balance between the public safety responsibilities delivered by the AEP and its participation in the marketplace?
4. Should AEP expand partnerships and alliances as a way to effectively deliver services?
5. Is it important to have the roles and responsibilities of the AEP defined formally (e.g., in legislation)?
6. What attributes or flexibilities are most important for the future delivery structure of the AEP?

Staff participants were not asked the first two questions. In order to take advantage of their wealth of Program knowledge, staff participants were asked:

1. What aspects of the current AEP program are functioning effectively?
2. What aspects of the current AEP require improvement?

The questions used to facilitate the public focus group discussions were developed recognizing that the general public was less knowledgeable of the Program than the other stakeholders. The focus group moderator's guide developed for the sessions is included with the individual focus group reports in the compendium.

Reported on the results

At the conclusion of each consultation session, a draft summary report was distributed to all participants for their review. The report contained main session themes, significant areas of discussion and quotes that reflected the views of each of the participants. Participants were given one week to provide comments on the draft. Changes were made to the reports, as required, and they were then finalized, translated and redistributed to all session participants in both official languages. At the conclusion of the consultation process all session reports were also posted on the ASD study web site (<http://www.tor.ec.gc.ca/asd-dmps/>.)

At the conclusion of the formal consultation process this report entitled *Environment Canada: National Consultation on the Atmospheric Environment Program* was developed. The report reflects the views of

participants from the general, provincial and OGD stakeholders on the six questions asked, staff views on the final four questions and the general public feedback on their tailored questions. This volume will be extremely useful to the senior decision-makers that are tasked with establishing the future direction of the program. A compendium was also developed that includes all of the session reports as well as a list of the individuals and organizations that submitted written comment.

Another report, entitled *Staff Issues and Insights*, was also developed, which reflects staff views on the two unique questions that were posed to them. This volume will be invaluable to the organization's management team regardless of the ASD decision.

4 Workshop Session Findings

This section of the report documents the views expressed by the various participant groups in response to the questions outlined in Chapter 3. The six questions were organized around three broad categories as follows:

- Needs and Requirements;
- AEP Approach and Focus; and
- Required Mechanisms.

Responses to the questions varied considerably according to the type of consultation session.

4.1 Needs and Requirements

As noted earlier, the following questions were addressed to participants in the general, provincial/territorial, and OGD participant groups in order to clarify their needs and requirements from the AEP.

1. "What are the programs, services or science activities that are most important for the AEP to deliver to ensure that your needs... (or, in the case of provincial consultations, "the needs of the Province/Territory of") are met?
2. "What programs, services or science activities no longer warrant significant effort by the AEP from your perspective?

Highlights of participant responses are presented in the next section, followed by a detailed description of responses to each question by session type (general, provincial/territorial, OGD).

Highlights

Session participants endorsed a number of needs and requirements. Primary among these were the following:

- **AEP leadership in atmospheric, water and ice data collection, quality assurance, archiving and access.** As one general session participant stated, "the data collection and ready availability [of the data] is the most critical part of your service - [it] must be maintained." There was also a lot of discussion around the need for a single, integrated national data bank.

"The data collection and ready availability [of the data] is the most critical part of your service - [it] must be maintained."
- **Provision of quality forecasts to the public.** A need was expressed for both short-term and extended forecasts, including long-range seasonal climate predictions.
- **Issuing of warnings of hazardous weather.** It was felt that timely dissemination methods, such as weather radio, were essential to the safety and well-being of the public.
- **Scientific expertise and research support.** A special need was mentioned for real-time consultation with a live person during emergency situations.
- **Establishment of national quality standards for atmospheric, water and ice data and related services.** Many participants suggested that the AEP should restrict its involvement in data monitoring to setting and enforcing standards, allowing others to actually collect the data. As one provincial session participant stated; "You don't have to do everything but you need to maintain responsibility and accountability for what you are doing."

"You don't have to do everything but you need to maintain responsibility and accountability for what you are doing."
- **Representing Canadian interests in appropriate international activities and programs.**

There was little agreement among participants as to what was no longer needed. However, some broad themes did emerge:

- Several participants in all types of sessions felt that the AEP should attempt to better coordinate their services with others so as to avoid duplication of effort. In other words, the AEP should not be conducting **services provided by other sectors and jurisdictions.**
- Participants from the private sector, in particular, felt that **the AEP should no longer participate in commercial activities.**
- A number of participants were **unable to identify any services** that are no longer required. These participants felt that the AEP had been cut enough already, and that any further cuts would be detrimental to the Canadian public.

4.1.1 General Participant Responses

The general consultation sessions involved a diverse group of participants, including representatives from the private sector, media, academia, non-profit sector and various levels of government. The following section synthesizes their responses and summarizes the salient debates that occurred.

What is Needed?

General session participants produced a substantial list of services deemed essential to their organizations. The details of these needs are presented below.

Data Collection and Archiving

Almost all participants expressed support for the AEP to play a leadership role in the collection, quality control and archiving of real time and historic atmospheric, water and ice data. Some participants identified a specific need for background air quality data. One participant remarked, "the data collection and ready availability [of the data] is the most critical part of your service - [it] must be maintained."

"The data collection and ready availability [of the data] is the most critical part of your service - [it] must be maintained."

Participants also noted that the AEP should make the data accessible to users on a nationwide basis. Many participants stated that single window access to archived data was required. The concept of a distributed virtual archive involving other agencies, academia and the private sector was also strongly suggested as a possible approach. Some participants also felt that access to AEP data should be free, particularly when obtained for teaching or research purposes.

Adequate resolution of the water (quality and quantity) monitoring network was identified as a specific monitoring related need.

Quality Standards

Many participants expressed their support for the AEP to play a leadership role in the establishment and enforcement of national quality standards, particularly in the area of atmospheric and water data collection and monitoring.

Scientific Interpretation and Expertise

There was majority support for the AEP to play a strong role in the provision of scientific expertise and interpretation to Canadians, with regard to both short term and long term atmospheric and hydrological issues. It was noted that access to these services must be equitable for all parties. Some participants felt that the level of interpretive services offered by the AEP suffered as a result of recent budget cuts. As well, several participants noted that the AEP should maintain scientific integrity to effectively carry out this function.

Participants in over half of the sessions stated that real-time interpretive service was essential, particularly during national weather emergencies. Other needs identified included expertise for operational purposes, socio-economic impact analyses, trend analyses and special services for the media. As one media representative explained, "Our viewers are hungry for weather information - storm warning and basic forecasts, climate facts, information on El Nino - we rely on Environment Canada for this background scientific material."

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Quality Forecasts

A number of participants expressed support for the AEP to continue to provide accurate, quality weather forecasts to Canadians. It was felt by many that these forecasts should cover both short and long-range (days to centuries) time scales. Many participants also felt that forecasts of all types should be provided, although there was not uniform agreement on this point. Others, primarily those from the meteorological private sector, felt strongly that the AEP should not be providing site-specific forecasts, as others could provide these services.

Specific forecast needs identified included precipitation (for water flow management), temperature, wind conditions and marine weather information. Furthermore, participants in remote and northern communities stated that there was a need for improved forecasting services to these areas, preferably provided through a local presence.

Municipal government participants also attended some of the general sessions, identifying some of their unique needs with regard to AEP services. In particular, a specific request was made for marine weather and ice patrol forecasting services in Newfoundland.

Weather Warnings

Many participants expressed support for the AEP providing hazardous weather warnings, including smog alerts, to the public. It was felt that timely dissemination methods for weather warnings, such as weather radio, were essential to the safety and well-being of the public. One participant suggested that the role of the AEP in disseminating weather warnings to the public should be specifically addressed in the Emergency Preparedness Act.

Dissemination

Several participants supported AEP involvement in the dissemination of data, forecasts, warnings and other general products. Some participants suggested that all AEP products should be disseminated freely to all users, though there was not full agreement on this point.

National Leadership and Education

It was recognized that there were many organizations in Canada with an interest in the atmosphere, cryosphere and hydrosphere. Participants in several sessions suggested that the AEP should act as the coordinating organization and demonstrate national leadership in all related matters.

As a corollary, many participants felt that the AEP, as the recognized national authority on these issues, would be the most appropriate organization to provide public education.

International Linkages

There was significant support for AEP leadership in ensuring Canadian representation in the international community. This included the maintenance of international linkages related to weather, water, climate, ice and related issues. There was a strong message from the academic community that international linkages were essential for research and science purposes.

Partnerships

Many participants expressed a desire to partner with the AEP in the delivery of science, products and services. In particular, university participants stated a desire for the continuation of the AEP's science subvention program, as this has been a successful partnering arrangement. Much more on this point is discussed in section 4.2.

Scientific Modeling

A need for AEP involvement in modeling activity was expressed by a number of participants. Specific modeling activity mentioned included climate, atmospheric transport and numerical weather prediction modeling. Participants in one session also advocated AEP involvement in hydrologic modeling.

Training

Some participants saw a need for AEP provision of meteorological training and continuing education to both AEP staff and external interests (e.g., meteorological private sector), on an equitable basis. It was felt that such a commitment should be mandated as it is essential for the long-term benefit of meteorological science in Canada.

Some participants also felt that the AEP must partner with academia in order to ensure there are sufficient numbers of graduates with the proper skills. A suggestion was received from one academic participant that the AEP should implement and promote "a prestigious scholarship program, which would attract some of the top students into atmospheric science."

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What is Not Needed?

General session participants identified a number of AEP programs and activities that they considered as no longer being required. These programs and services are identified below.

Commercial Services

Many participants expressed opposition to AEP provision of commercial services, such as analytical and consultation services and Environment Canada's 1-900 number. Participants from the meteorological private sector were virtually unanimous in their strong opposition to AEP commercial involvement and, in particular, to the AEP competing directly with them. There was disagreement on this issue among the other types of participants. A full discussion of AEP commercial involvement can be found in section 4.2.

One participant commented that "It is important that the AEP have a strong national focus that concentrates on safety, security and health of all Canadians as a whole. It should provide a regulatory role, while supporting the Canadian economy generally and contributing to the development of a viable private sector meteorology industry in Canada. AEP should not compete with the private sector for commercial work."

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Services Provided by Other Jurisdictions

Many participants felt that the AEP should not provide services that are, or could be, provided by other sectors or jurisdictions. It was felt that efficiencies could be gained by eliminating duplication, such as that which may exist between provincial and federal monitoring networks. Another example of possible duplication was research, which could be conducted in universities.

Other Services

The following list includes specific activities identified as being no longer needed. The rationale given for why these were no longer needed included the fact that they could be provided by others and that, while they might be nice to have, they were not really critical. It is important to note that the discontinuance of the activities listed below was not widely supported. In fact, most of the below were mentioned by only one or a few participants. However, this list does show the full range of views on which AEP services were deemed to be essential and non-essential.

- Ultra-Violet Index;
- Multiple Internet Sites;
- Aviation Weather Services;
- Ice Services;
- Forecasts;
- Dissemination;
- Lightning Network;
- Ground Based Measurements; and

- Analyzed Meteorological Output ("just collect it and publish it").

Nothing Identified

Many participants were unable to identify any products or services that were no longer needed. It was felt that there had been far too many cuts in services provided by the AEP already, and that further cuts should not even be considered. As expressed by one participant, "There is a terrible irony that just now, after we have signed the Kyoto Protocol...after the floods and the ice storm and the ominous signs of drought on the Prairies this summer, we're here trying to deal with the slashing of our national weather and climate service."

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4.1.2 NAV CANADA - A Special Relationship

NAV CANADA is a major client who maintains a contractual relationship with the AEP. *NAV CANADA* contracts with the AEP for delivery of aviation weather forecasts and related services and will continue to need these types of services in the future.

While noting the high quality of AEP products, *NAV CANADA* identified several needs including enhanced responsiveness, elimination of regional inconsistencies and increased transparency in costing/pricing. One comment received from *NAV CANADA* stated that "if quality can be assured and cost reduction incentives are present, anything is possible in a business environment, including partnerships. Flexible wording of the ASD legislation is required to ensure that [Environment Canada] can compete for the aviation weather service contract, regardless of how *NAV CANADA*'s requirements evolve."

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4.1.3 Provincial/Territorial Responses

The following summary is based on a synthesis of provincial and territorial responses.

What is Needed?

Session participants identified specific requirements for products and services delivered by the AEP. The following section outlines these needs.

Data Collection and Archiving

Provincial/territorial participants uniformly expressed a requirement for the AEP to play a coordinating and national leadership role in the collection, quality control and archiving of real time and historical atmospheric, water and ice data. One participant stated, "The federal government is obligated to monitor environmental parameters on a national scale to certain standards."

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Participants felt that the AEP must ensure this data is easily accessible to all users. It was suggested that the AEP create a single, integrated national data bank, perhaps accessible via the Internet. It was also suggested that there was a need to rationalize the atmospheric, hydrometric and water quality monitoring networks. Some participants expressed concern over recent station closures.

With specific regard to water, many participants stated a specific requirement for both water quality and quantity data. One provincial representative commented, "Continue and strengthen participation in the long-term water plus air and rain monitoring, research, and modeling activities particularly related to transboundary issues and initiatives." Furthermore, some participants identified a need to increase the density of the hydrometric network.

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Quality Forecasts

The majority of participants expressed a requirement for the AEP to produce and disseminate high quality short and long-range forecasts for weather, water and atmospheric constituents, including long-range seasonal climate predictions. Participants in several sessions noted the need for national consistency in the delivery of these forecasts.

The importance of these forecasts for industries such as agriculture and tourism was emphasized in a few sessions. This need was expressed as such by one participant, "[Province's name] could be faced with large impacts from a lack of weather forecasting service within the province - agriculture could be a big loser. The prairies are ground zero for climate change - it's a BIG ISSUE!"

"[Province's name] could be faced with large impacts from a lack of weather forecasting service within the province - agriculture could be a big loser. The prairies are ground zero for climate change - it's a BIG ISSUE!"

Weather Warnings

A requirement for the AEP to continue to issue warnings of hazardous weather to the public and to provincial and territorial agencies was noted by many participants. In addition to severe weather warnings, some participants also needed frost, heavy rainfall and snowfall and wind warnings.

Of concern to some participants was the lack of a mass dissemination vehicle for AEP public weather warnings. It was felt that public safety could be compromised if weather warnings were not properly disseminated. Related to this, participants felt that all services related to severe weather were public good activities and should be provided at no cost.

Scientific Interpretation and Expertise

A large majority of participants expressed a requirement for the AEP to provide scientific expertise and interpretation to their jurisdictions, in support of activities such as forest fire and flood management. Several participants also noted a specific requirement for the provision of an enhanced level of expertise and interpretation service. A special need was mentioned for real-time consultation with a live person during emergency situations. Particular concern was expressed about the current AEP practice of charging provinces for flood forecasting information. One participant expressed this concern as such; "One to one consultation

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Scientific Modeling

Many participants felt that the AEP should assume a coordinating role for environmental research and modeling activities in Canada. Participants noted that the AEP should maintain its scientific integrity if it is to assume this role, as credibility and trust are needed. In addition to the proposed coordination role, participants identified specific modeling activities in which they would like the AEP to be involved. These include air quality, dispersion, global climate change and pollutant plume (for emergency purposes). One participant also wanted the AEP to possess site specific modeling capabilities to determine the effects of transported mercury on the environment.

Quality Standards

Participants in the majority of sessions noted a requirement for the AEP to take the lead in the establishment and enforcement of national standards for atmospheric, water and ice data and products. Selected participant views in support of this issue included: "national standards must be maintained"; and "leadership by the federal government in setting standards for national programs [is necessary]." Some participants also felt that the AEP should maintain its strong role in the arena of global standards.

"National standards
must be maintained"

Some participants also suggested that the AEP should restrict itself to the coordination and monitoring of all national data collection. As was communicated in one session, "You don't have to do everything but you need to maintain responsibility and accountability for what you are doing." The same point was also made with respect to archiving. It was felt that the AEP should coordinate or orchestrate but not necessarily carry out the function.

"You don't have to do
everything but you
need to maintain
responsibility and
accountability for what
you are doing."

Water Quantity and Quality Activities

Many participants expressed a need for the water responsibilities within Environment Canada to be clarified. There was concern regarding the current fragmentation of responsibilities for water quality within the Department. Specifically, a need was expressed for a better-defined link between the AEP and

water quality activities. One participant's closing thought for the ASD study team was a request for senior management to "give water more profile in the Department."

"Give water more
profile in the
Department."

Some participants felt that the AEP should be the national and international lead for water quantity and quality activities. Specific needs mentioned include flood plain assessments, water quality analysis and data for waste management purposes.

What is Not Needed?

Participants in the provincial/territorial sessions also identified some AEP programs and activities that were considered as no longer required. The following section summarizes their comments.

Services Provided by Other Jurisdictions

Some participants stated that the AEP should not provide services that are or could be provided by other sectors or jurisdictions. As one participant expressed, "[There is a need for] greater cooperation in specific areas to avoid duplication." Specific examples identified were flood forecasting and hydrological modeling, since provincial expertise exists in these areas.

Specific Products/Services

Participants identified other specific products and services that were no longer required from the AEP. These were:

- Ultra-Violet Index;
- Site specific weather forecasts;
- Regional climate models;
- Canadian Lightning Detection Network;
- Weather radio;
- Water quality analysis; and
- Commercial water programs.

It should be noted, however, that many participants recognized that a product or service not needed by one sector, such as water quality analysis, might be required by another.

Nothing Identified

Participants in half of the twelve sessions were unable to identify any products or services that were no longer required.

4.1.4 Federal Government Responses

The following summary of other federal government department needs is based on interviews and a consultation session held with representatives from federal departments and agencies that have substantial client and/or partner relationships with the AEP. Federal participants in these sessions stressed the critical nature of AEP data, information, modeling and analysis to their programs. At the same time, concerns were also expressed regarding the AEP's priorities and its ongoing ability to perform its role.

What is Needed?

The *Department of National Defence* has a contractual relationship with the AEP and AEP data and services are critical to DND operations and readiness. DND representatives identified requirements for AEP data including radar data and weather satellite data. The department also requires weather and oceanographic modeling and analysis support, forecasting and presentation services and specialized meteorological advice, largely provided by seconded AEP personnel. Information technology support for specialized software and associated software development is also required.

The *Canadian Coast Guard* identified an ongoing requirement for weather information, forecasts and warnings for the Great Lakes-St. Lawrence and coastal marine areas and for sea ice services in the Arctic and, seasonally, in east coast waters. These AEP products are transmitted to mariners by the Coast Guard and are critical to this mandated responsibility of the CCG. In addition, Coast Guard requires specialized AEP support during Search and Rescue missions, oil spill cleanup and other emergency operations. It was also pointed out that the Coast Guard supplies the AEP with weather, sea state and ice observations from ships and coastal stations and provides logistical support to the AEP in the deployment of offshore meteorological buoys.

Transport Canada identified needs for AEP support in carrying out its aviation safety oversight role, for its evaluation of the effectiveness of AWOS equipment (e.g., automatic weather observing stations), and for its ongoing responsibility in setting safety standards in air transportation.

Parks Canada identified needs for AEP forecasting and modeling support for forest fire management and avalanche prediction. Arising out of its concerns regarding future climate change, Parks Canada was also interested in AEP regional climate modeling. Parks Canada also identified concerns regarding the impacts on national parks of low level ozone and long-range transport of pesticides. The agency works in partnership with the AEP to address these and related issues. It has assisted the AEP in establishing approximately 90 monitoring sites in national parks, providing on-site support for these AEP monitoring stations. In return the AEP supplies Parks with climate data, information on pollutant loadings and other advice.

Federal Science Departments (e.g., *Natural Resources Canada*, *Department of Fisheries and Oceans*, *Agriculture Canada*, *Health Canada*) identified considerable interaction with the AEP, generally on a partnership basis. Relations with the AEP are managed through Memorandums of Understanding (MOUs), through Government-wide agreements (e.g. PERD) which provide funding and structure for cross-departmental initiatives and through normal exchanges and cooperation on a scientist-to-scientist basis. AEP data, information, modeling outputs and advice are common needs for all of these departments. Science departments also supply data to the AEP from monitoring sites that they operate.

The *National Research Council* identified that it provides facilities, logistical support, and expertise to the AEP and depends on AEP data to some degree. A Memorandum of Understanding governs co-operation with the AEP.

Indian and Northern Affairs identified that it has a "quasi-provincial" relationship to the AEP in that it needs AEP data, information and modeling for resource management, flood prediction and other purposes. This information is critical to its northern program.

Uniform Requirements

In addition to the above statements of departmental and agency requirements, a number of uniform requirements were identified by federal participants:

Data Archiving

Data archiving was identified as a crucial or fundamental role and function of the AEP. It was also suggested that archived data be easily and readily accessible.

Monitoring Standards for Water

A need was identified for the AEP to ensure that adequate monitoring of the nation's water resources is carried out, to meet requirements related to health, safety and the economy. Participants stated that at least the current level of monitoring is required for water quantity and quality, suggesting that demand for water data will increase rapidly as the urban-based population increases and the water tables drop. The establishment and maintenance of national quality standards for water data was identified as a fundamental issue, the suggestion being that if the AEP does not carry out the monitoring then the provinces should do it and participate with the AEP in the development of the national standards.

National Leadership

Participants identified a need for the AEP to assume a greater leadership role in joint programs such as, for example, in climate monitoring. Atmospheric monitoring and the provision of weather forecasting support were, as mentioned earlier, identified as ongoing requirements by several departments and agencies. It was noted that the AEP has traditionally supplied these services. Participants suggested that while the AEP need not necessarily itself provide these services in every instance, there is a need to ensure that someone does. There was also a requirement to establish and maintain national standards for such services. In the latter context, it was stated that the AEP should more clearly define and position its regulatory or standard setting responsibilities.

Research

Federal participants stated that it was critical that the AEP continue its involvement in research, particularly since the organization has expertise in both atmospheric and water science. Identified federal research needs included the development of climate scenarios and climate forecasts and the provision of information

on future changes to the hydrologic regime. This information was needed to understand possible changes in ocean circulation and other oceanic features.

Special Needs

Participants identified several more specific issues. These included the need to monitor the ozone layer and airborne contaminants in the north and the need for a single source for the issue of weather warnings for aviation, including warnings of volcanic ash.

Concerns

Federal participants also expressed a number of significant concerns during the consultation process. In particular, there were concerns over the present relationship between departments and the AEP arising from:

- The shift from a partnering relationship to a commercial one. ("It's just like dealing with Eaton's, only now we get bad service!");
- Pricing confusion and inconsistency;
- Specialty science has been cut off;
- Lack of consultation;
- Long-term data maintenance;
- AEP's ability to continue with long term issues, such as climate change;
- The ability of client departments to pay for AEP services; and
- Data restrictions. ("If a department buys data from AEP, are there limits on its ability to re-transmit that data to outside users?")

"It's just like dealing with Eaton's, only now we get bad service!"

"If a department buys data from AEP, are there limits on its ability to re-transmit that data to outside users?"

What is Not Needed?

Federal government participants indicated a need for the AEP to review its priorities and future direction and to focus on the business it intends to be in. Participants were unable to identify specific AEP activities and services that were redundant, though it was questioned whether the AEP should be providing logistics as a service (e.g. shipping supplies to remote sites).

4.2 AEP Approach and Focus

The following questions were posed to all participant groups in order to determine their views with respect to the most appropriate future approach and focus of the AEP:

3. "What is the right balance between the public good responsibilities delivered by the AEP and its participation in the marketplace?"
4. "Should the AEP expand partnerships and alliances to effectively deliver services?"

For the purpose of this report, public good responsibilities can be taken to include programs and services in support of the safety, security, health and economic well-being of Canadians in general. Commercial or marketplace activity can be taken to mean the provision of targeted or specialized programs or services to paying customers some of whom may gain a commercial benefit as a result.

Highlights

The following points outline the views of participants regarding the appropriate balance between the provision of public good and commercial services.

- All stakeholders felt that **the provision of basic services for the public good should be the primary focus of the AEP** and these services should be fully supported by tax-based funding. As was stated by one staff session participant, "there is a need to maintain a strong, non-commercial science industry, funded by and responsible to the public good. Not all that is beneficial for individuals can be bought and sold." Another participants stated, "the public good should be funded by the public purse."
- **Selective commercial activity was felt to be acceptable by many participants;** however, very strong opposition to such activity was expressed by some participants, particularly the meteorological private sector. AEP commercial activity that was endorsed by a broad spectrum of participants included activities with a public good component (e.g., the provision of aviation weather services to NAV CANADA. It should also be noted that the general public were generally supportive of the AEP participating in the marketplace.
- All participants felt that should the AEP continue to pursue commercial activities, then the AEP should do so on a **fully costed basis** (i.e., commercial services should not be subsidized by the tax base, in order to ensure a level playing field). Additionally, it was recommended that the AEP should adopt a transparent and nationally consistent pricing scheme.
- The following points outline the views of participants regarding the AEP's approach to partnership arrangements.
- Participants endorsed the **expansion of partnerships and alliances** as an approach that would increase the efficiency and effectiveness of the AEP. Examples of successful partnerships, such as the existing

"There is a need to maintain a strong, non-commercial science industry, funded by and responsible to the public good. Not all that is beneficial for individuals can be bought and sold."

The public good should be funded from the public purse."

hydrometric agreements with provinces and territories, were considered as a possible model for future partnerships.

- **Characteristics of partnership arrangements** identified by participants include shared risks, liabilities and benefits; and mutual decision making.
- A number of practical **suggestions were offered regarding potential future partnerships**. For example, it was suggested that the AEP partner with universities and the private sector to conduct research and development. Also, one participant suggested that the "AEP needs to develop positive links with [the] private sector. The private sector can help [the] AEP fight for support and stop further attrition of resources."

[The] AEP needs to develop positive links with [the] private sector. The private sector can help [the] AEP fight for support and stop further attrition of resources."

4.2.1 General Participant Responses

During the consultation sessions for General Stakeholders, a variety of opinions were expressed, often forcefully, regarding the most appropriate AEP approach and focus. A synthesis of the responses to the preceding questions is presented below. Where a particular viewpoint was shared by a clearly identifiable group of participants, this information has been included.

Public Good and Commercial Activity

The issue of the appropriate balance between public good and commercial services produced some very strong opinions in the general sessions. The following details these views.

Public Good - The Top AEP Priority

Participants in all of the general sessions uniformly stated that the AEP's top priority and primary focus should be programs and services for the public good. Public good activities were generally considered to be those activities affecting health, safety and sustainable development. As stated by one participant, "It would give me great comfort to know that Canadians' best interests are being addressed. The commercial side will look after itself." Several participants also suggested that this public good focus be legislated.

"It would give me great comfort to know that Canadians' best interests are being addressed. The commercial side will look after itself."

Furthermore, many participants expressed the view that the provision of public good services should be fully supported by tax-based funding. It was felt that because these services benefit everyone, there should be no additional charges

"The public good should be funded from the public purse."

associated with their delivery. As expressed by one participant, "the public good should be funded from the public purse."

Private meteorological sector participants, in particular, were virtually unanimous in the view that the AEP should focus exclusively on public good responsibilities. One participant expressed this view as such, "the AEP should concentrate their efforts on improving the 'public good' services and encourage the growth of the private sector in Canada."

"The AEP should concentrate their efforts on improving the 'public good' services and encourage the growth of the private sector in Canada."

No AEP Commercial Involvement

Some participants in all but one session expressed a view that the AEP should not be involved in commercial activity. Private meteorological sector participants were particularly forceful in expressing their strong opposition to AEP involvement in commercial activity. The key message that one participant provided to the AEP was, "do not compete with the private sector on commercial contracts."

"Do not compete with the private sector on commercial contracts."

An alternative approach that was advocated by private meteorological sector participants was the adoption of the "American model". In this scenario, the AEP would act as a wholesaler of data to firms, who would then add value to it and sell it for profit. This was part of the argument that the AEP should be nurturing the private sector instead of stunting its growth by competing against it.

Selective AEP Commercial Involvement

Some participants saw selective commercial involvement by the AEP as necessary and acceptable in light of the present fiscal realities in government. Considerable debate took place around this position and several qualifications or constraints were proposed.

Participants in a number of sessions expressed the view that selective commercial involvement by the AEP was acceptable where there was no private sector capacity. It should be noted that a number of participants indicated that the lack of private sector capacity was attributable to the AEP's presence, rather than an inability to perform the service. The majority of private sector participants felt that the AEP should vacate the marketplace and act in a supporting role in order to develop the appropriate private sector capacity. Concern was expressed, however, that if the AEP vacated the market, foreign firms would step in before

the Canadian private sector could develop adequate capacity. There was not full agreement on this issue, as not everyone felt foreign competition would be problematic.

Many participants felt that it was acceptable for the AEP to implement charges for specialized data used to generate a profit. This would ensure that the taxpayer would not be subsidizing the private sector, and that they helped pay for the infrastructure. Others felt that it would be too burdensome to charge part of the infrastructure costs and that only the incremental costs involved in distributing the data should be charged. One participant asked of the AEP, "Please don't fall into the user pay trend that is popular with the Federal Government now. The public and others see this as user pay twice!"

"Please don't fall into the user pay trend that is popular with the Federal Government now. The public and others see this as user pay twice!"

Media participants, in particular, voiced concerns about the issue of charging the private sector for data. They pointed out that they consider their services as a vital component of the public good, and are not using the information for profit. Thus, they should not be charged a fee. They did indicate, however, that they would be willing to pay extra for historical information, or information with significant value added.

Participants in a number of sessions felt that it was important that a full costing approach be taken to all AEP commercial services activity. Concern was expressed by some participants that completely accurate costing might not be possible, making a full costing approach difficult to achieve. More accurate costing, though, was felt to be essential to ensure a level playing field. It was mentioned specifically that there should be no taxpayer subsidization of AEP commercial activities.

Participants cited the following aspects of the AEP as being problematic in regards to competing on an even playing field:

- government agencies do not pay taxes, the private sector does;
- the data is owned by the AEP, the private sector must pay for it;
- the AEP does not have an open, transparent financial system; and
- private business is required to make a profit, the AEP is not and could thereby operate at a loss.

A few participants also stated that selective commercial activity was acceptable in cases where there was a public good component such as, for example, the provision of services to NAV CANADA. AEP

involvement in this case was felt to be necessary because of the public safety and security implications of the services. It was felt that government would be more accountable in the event that anything went wrong.

Partnerships and Alliances

The majority of general session participants stated that the AEP should expand partnerships and alliances in order to effectively deliver services. As one participant stated, the "AEP needs to develop positive links with [the] private sector. The private sector can help [the] AEP fight for support and stop further attrition of resources."

The "AEP needs to develop positive links with [the] private sector. The private sector can help [the] AEP fight for support and stop further attrition of resources."

Specific areas where it was suggested that opportunities existed for expanded or more effective partnerships are identified below:

- Research and development (with universities and private sector);
- Severe weather watch (with volunteers and Non-Government Organizations - NGOs);
- Training (with universities and the private sector);
- Product marketing (with the private sector);
- Monitoring (with the private sector and other government departments/jurisdictions);
- Lightning detection (with the private sector and other government departments/jurisdictions); and
- Nurturing growth of private sector.

While the majority of participants stated that the AEP should expand partnerships and alliances, some did not. One non-profit organization felt that partnerships were simply another way to devolve services and responsibilities.

The organization's representative stated that they were "generally not in favour of the AEP [partnership] initiative - NGO's are already far too busy picking up where governments have abdicated their voter-given mandate."

"NGO's are already far too busy picking up where governments have abdicated their voter-given mandate."

Attributes of an Effective Partnership

Participants also described the attributes that they felt characterize an effective partnership. Mutual decision making was commonly expressed as being

"Work *with* me, not *against* me, nor *over* me. It's time to change the old culture."

fundamental to durable and effective partnership arrangements. As stated by one participant, "Work *with* me, not *against* me, nor *over* me. It's time to change the old culture."

Many participants also identified the need for partners to share both the risks and the rewards if partnerships were to be of mutual benefit over the long term. Some participants cited the importance of formalizing partnership arrangements to ensure that each party fully understood their commitments and to give stability to the relationship. Open and frank communications were also identified by several participants as being essential to successful partnerships. Finally, some participants expressed the need for partnership arrangements to be flexible and tuned to the individual circumstances facing both parties. In other words, while a formal partnership might be appropriate for a long lasting arrangement, an informal alliance might be more appropriate for short-term issues.

One private sector organization also expressed frustration at the current AEP approach to partnering. Despite numerous opportunities and offers made by them to partner with the AEP, their invitations had not been acknowledged. It was felt that if the AEP is going to take partnering seriously then it should become much more responsive to the needs of those who wish to work with them.

4.2.2 Provincial/Territorial Responses

The following presents a synthesis of responses provided by provincial/territorial session participants.

Public Good and Commercial Activity

Session participants expressed a range of views regarding the appropriate balance between AEP public good and commercial activity. The following presents the most common views.

Public Good - The Top AEP Priority

Participants in all twelve provincial/territorial sessions uniformly stated that the AEP's primary focus should be the delivery of programs and services for the public good. As one participant stated, "the public good should be the highest priority." Many participants also felt that public good services should be fully supported by tax-based funding.

"The public good should be the highest priority."

No AEP Commercial Involvement

Some participants opposed any AEP involvement in commercial activity. It was felt that there was a danger of compromising the core public good service when getting involved in commercial services. Vital resources might be diverted from public good activities to commercial activities. Some participants felt

"Program quality has suffered and is hanging on by the extraordinary efforts of some individuals."

that this was already happening, and one felt that "program quality has suffered and is hanging on by the extraordinary efforts of some individuals." It was also felt that AEP commercial involvement creates an unfair financial burden on the private sector when the AEP competes directly for contracts.

Selective AEP Commercial Involvement

The majority of participants stated that selective commercial involvement by the AEP was acceptable in light of the present fiscal realities in government. One participant expressed that it was appropriate for the AEP to compete in the marketplace if it would help to sustain the infrastructure and prevent the AEP from "withering and dying." Some debate took place regarding this approach and several qualifications or constraints were recorded.

Some participants felt that it was appropriate for the AEP to offer commercial services where "there is no private sector to take up the slack." In particular, participants in less populated areas (northern areas, PEI) noted that there was often no alternative to AEP delivery. As was noted by one participant, "the AEP is the only game in town." It was felt that if the AEP were to withdraw from offering commercial services, these services would no longer be available where private sector capacity did not exist. In addition, some participants did not feel it was sensible for the AEP to withdraw from the marketplace simply to encourage the private sector.

Several participants opposed any taxpayer subsidization of AEP commercial activity. It was felt that the AEP should charge fair market value for service so as not to undercut the private sector. It was also suggested that the AEP adopt a transparent cost accounting approach to all commercial activity. This would provide partners and clients ready access to credible financial information.

Many participants expressed a need for a differentiated pricing system for AEP commercial products. In particular, they argued that taxpayer funded agencies should not be charged the same rates as profit oriented private sector clients. It was pointed out by participants that provincial/territorial agencies have a public good orientation and are, in addition, often partners with the AEP in the collection of data for which they may subsequently be charged. One provincial representative stated, "we are talking left pocket, right pocket - it is all the same taxpayer." Another participant stated, "There is only one taxpayer. Any attempt to treat the Province as a commercial client will only raise administration costs and decrease the total program that each level of government can deliver to protect and manage the environment."

Partnerships and Alliances

Provincial/territorial session participants uniformly supported AEP expansion of partnerships and alliances in order to effectively deliver services. Participants identified the following as areas where opportunities existed for further development of partnerships and alliances.

Data Collection and Archiving

Participants in all sessions identified data collection and archiving as an area for further development of partnership approaches. It was noted that many of these partnerships have proven effective in the past. It was also suggested that the AEP could partner for the dissemination of data, provided that data quality could be ensured. This could involve joint setting of monitoring standards.

Water

There was a strong endorsement of the need to maintain and improve existing federal-provincial partnerships in the water resources area. It was stated in one session, " We want to maintain and enhance our partnerships under the Canada - [Province's name] Water Quality Monitoring Agreement to enable us to collect reliable quality information for comprehensive evaluation of the aquatic environment." It was felt strongly that these water partnerships should be used as a base for future alliances.

" We want to maintain and enhance our partnerships under the Canada - [Province's name] Water Quality Monitoring Agreement to enable us to collect reliable quality information for comprehensive evaluation of the aquatic environment."

In addition, many participants identified themselves as being open to innovative partnership arrangements in this sector. Some participants also noted the possibility of partnering with the AEP in the preparation of flood warnings, although there was not agreement on this issue.

Technology

Several participants identified technology development, marketing and implementation as having significant potential for partnership approaches to yield savings and efficiencies. A need was expressed for partners who use AEP data and products (including the private sector) to share the support and benefits of the infrastructure. It was felt that this was critical to ensure that other partnerships are effective.

Research

Research was also identified as an area where partnerships and alliances offered significant benefits. Specifically, these partnerships could be used to promote and further science and education and to broaden internal and external perspectives.

4.2.3 Federal Government Responses

The following presents a synthesis of responses provided by other federal government representatives.

Public Good and Commercial Activity

The following presents the views of federal government representatives regarding the issue of balance between AEP public good and commercial activity.

Public Good - the Top AEP Priority

Participants, while recognizing that commercial dollars pay for a portion of the AEP infrastructure, stated that it is important not to compromise public safety in the pursuit of commercial dollars. It was also noted, however, that public safety could be compromised by AEP vacating the market before adequate private sector capacity was realized. They also emphasized that the AEP can't "turn itself on and off". Once the AEP exits a service area, the public cannot expect it to redevelop the program cost-effectively four years later.

A need was expressed for public good to be defined more broadly. Specifically, they would like to include the avoidance of costs to government departments and agencies and to the support of national objectives. It was also felt that public good services should be available to everyone for little or no cost. It should be noted, however, that the AEP's data charging policy, where charges differ depending on the user, was seen in a very positive light. As one participant stated, "Others should follow this sensible way of proceeding."

No AEP Commercial Involvement

Some participants felt that the AEP should not develop new products/services that can be spun off and used to make a profit. As stated by one participant, "if someone else can do it, then buy it." Furthermore, it was felt that

"If someone else can
do it, then buy it."

Environment Canada shouldn't sell its own products. Any new products that are created need to be devolved to the private sector. For example, the Canadian Lightning Detection Network (CLDN) uses a third party to market its products.

Some participants also felt that the further you move out from the Department, the more difficult regulatory issues become. It was felt that there was an inherent danger of a conflict of interest when the AEP gets involved in commercial activity that it also regulates. As one participant queried, "If you set the rules, is it fair to play in the field?"

"If you set the rules, is it fair to play in the field?"

Selective AEP Commercial Involvement

With respect to the aviation sector, it was pointed out that private meteorological companies want to supply aviation terminal forecasts. Consequently, the AEP needs to define its regulatory role with respect to this and other similar issues in the interests of public safety. Other than public safety, if industry can provide a service, then it should be encouraged to do so.

Partnerships and Alliances

Federal participants uniformly supported further development of partnerships and alliances, in particular, stating a desire to enhance their own existing relationships with the AEP. They pointed out that while a good partnership base already existed there was scope for improvement and that all Departments are trying novel approaches to partnering. For example, partnerships with universities are now being explored. They also noted that secondments, for example, are a way to pass expertise to and from other Departments.

Attributes of an Effective Partnership

Federal officials noted that partnerships could mean different things to different people and hence there is a need to define the roles and principles of partnerships clearly. Participants felt that depending on the model chosen, partnership arrangements may need to be either more formal or less formal. A specific suggestion was that the AEP should have true, balanced partnerships where private sector interests market AEP products (e.g., the Canadian Lightning Detection Network).

It was also felt to be important to involve all concerned stakeholders from the beginning. Furthermore, it was noted that equity is essential, in the sense that no potential partner should be at a disadvantage because of the partnership process selected. Realistic expectations were also deemed to be necessary, given that some provinces only partner because operations are subsidized and that if services were fully cost recovered they would likely opt out. Finally, a results orientation was felt to be essential. Partners should focus on outcomes and remove barriers where appropriate.

4.2.4 Staff Responses

The following summarizes responses provided by Environment Canada staff.

Public Good and Commercial Activity

There was a great deal of debate in the staff sessions regarding the appropriate balance between AEP public good and commercial activity. This debate is detailed below.

Public Good - The Top AEP Priority

Participants in all twenty-two staff consultation sessions uniformly identified the provision of services for the public good as the top priority for the AEP. One participant stated, "there is a need to maintain a strong, non-commercial science industry, funded by and responsible to the public good. Not all that is beneficial for individuals can be bought and sold." Many participants went further in stating that the provision of public good services should be fully supported by tax-based funding.

"There is a need to maintain a strong, non-commercial science industry, funded by and responsible to the public good. Not all that is beneficial for individuals can be bought and sold."

No AEP Commercial Involvement

There was a large contingent of participants who felt that the AEP should not engage in any commercial activity. It was suggested that the AEP leave the commercial marketplace entirely to the meteorological private sector. A water sector participant expressed a fear that if the AEP adopted a policy of full cost recovery, hydrometric technicians may become "hydrostitutes." Moreover, it was felt that if the organization remains subject to direct political influence, then "we are swimming with sharks with our hands tied behind our back" when competing with the private sector. There was also concern expressed regarding the shift of resources away from public good activities in order to focus on commercial ventures.

"We are swimming with sharks with our hands tied behind our back" when competing with the private sector.

It should also be noted that some participants expressed the view that a conflict of interest situation was being created in some instances. An example of this is when the AEP provides data on a commercial basis and this information is subsequently used by the client for formal environmental assessments that are then reviewed by Environment Canada officials including AEP staff members.

Selective AEP Commercial Involvement

Another significant portion of staff supported selective involvement by the AEP in commercial activity. During discussions of this approach, however, many specific considerations were noted, which are detailed below.

Participants in nearly half of the sessions identified the need for AEP commercial activities to be fully costed and accurately priced to ensure a level playing field for private sector providers. Commercial services should not be subsidized by tax-based funding.

Furthermore, it was felt that only value-added information should be charged for, while raw data and public good information should be made freely available, though there was not full agreement on this point. As one participant stated, "everything is being given away, [such as] satellite pictures on the Internet and data." It was felt that this would reduce the AEP's competitive advantage.

"Everything is being given away, [such as] satellite pictures on the Internet and data."

Several participants also endorsed the view that commercial companies should be charged full costs for specialized data and services used to make a profit. This was viewed as a means of ensuring that they contributed to the funding of the national meteorological and hydrological infrastructure.

Some participants recommended that a differentiated pricing system be implemented for different client groups. Here the view was that federal, provincial and other public organizations (such as the CBC) with a public good component to their activities, should be subject to, at most, incremental charges. Only profit-oriented customers should be charged full costs and possibly a profit in line with competitive market rates. It should be noted that some participants were opposed to levying any charges on customers with a public good orientation, arguing that in most instances these clients were taxpayer funded and should receive free services from the AEP.

It should also be noted that participants in one session expressed concern with the concept of selective commercial involvement. They cautioned that the AEP cannot be just a "little bit in" the commercial business. It was felt that the AEP should either be clearly in the commercial market, or should provide all services and products to all users free of charge.

The AEP cannot be just a "little bit in" the commercial business.

Related Matters

Staff highlighted several related issues and suggestions during discussions on the preceding themes. Participants in the majority of sessions were uniformly of the opinion that the lack of a clear AEP mandate was the cause of most of the uncertainty and confusion surrounding commercial involvement by the AEP. This has in turn led to the inconsistent delivery of service that has sparked so much controversy.

Participants in several sessions also identified the need for better marketing by the AEP to increase its visibility in the marketplace and in the eyes of the public at large. As one participant stated, "Environment Canada's public profile needs to be raised, at least with respect to the weather services." It was felt that without the proper approach to commercial services, then it is futile and should not be considered.

"Environment Canada's public profile needs to be raised, at least with respect to the weather services."

There were a number of participants who expressed the view that the AEP should be split into two organizations, with one focused entirely on the public good and the other exclusively on commercial activities. This would help staff understand clearly the role they are expected to fulfill, as they would be working either only for the public good, or only for commercial benefit.

Partnerships and Alliances

Virtually unanimous support was expressed for further expansion of partnerships and alliances as a means of increasing the efficiency and effectiveness of AEP programs. One session participant suggested that the AEP "work toward building on partnerships that are beneficial to both parties."

Several participants felt that adequate funding was essential to successful partnerships, and that without this funding partnerships should not be pursued. Also, some participants felt that an ombudsman to resolve conflicts between partners would be beneficial to a partnership approach.

"Work toward building on partnerships that are beneficial to both parties."

AEP staff members suggested several areas where they believed that opportunities existed for expanded partnerships, which are detailed below.

Partnerships with Other Government Departments and Governments

Most participants identified other government organizations as offering additional opportunities. Examples were cited where such governmental partnerships were working well such as the relationship between the AEP and the Canadian Coast Guard.

Water Sector

Participants in a number of sessions identified the water sector as an area with a history of successful partnerships and where further potential existed. Some participants noted, though, that they felt these relationships to be contractually based, and therefore may not be true partnerships.

Academia

Most participants identified partnerships with the academic community as offering real benefits and encouraged further development of alliances with this sector. Potential areas for partnership include the training of future AEP professionals and science and research activities.

The Private Sector

It was noted that alliances with the private sector would offer the opportunity for both parties to expand skill sets and acquire new technologies. It was recognized, however, that partnerships with the private sector are different than partnerships with universities and other government jurisdictions. It was felt that the private sector is interested only in making money, as opposed to providing public good services or investing in science. Some participants indicated that they did not see the private sector as a potential partner at all.

Media

Participants felt that it is better to partner with the media for the dissemination of AEP products instead of developing this expertise in-house. As one participant suggested, the AEP should "focus on core business and partner for the rest. For example, we do forecasts and the Weather Network does the delivery."

"Focus on core business and partner for the rest. For example, we do forecasts and the Weather Network does the delivery."

International

Many participants identified international partnerships as offering substantial benefits to the AEP and endorsed continued pursuit of international alliances. It was felt that these alliances were critical factors in

maintaining the credibility and reputation of the AEP. Furthermore, such alliances advance atmospheric and hydrological science.

Environment Canada

Some participants saw partnerships with the other components of the AEP's parent department as offering potential for expansion. It was suggested that the AEP ensure mechanisms are in place to allow continued interaction and cooperation with the remainder of Environment Canada.

Utilities

Some participants identified expansion of partnerships and alliances with utilities as offering significant potential, particularly in water monitoring. This was considered important, since utilities also serve a public good function.

NGOs

Some participants identified Non Government Organizations, such as environmental and health organizations, as offering considerable potential for the development of valuable partnerships, particularly in the area of public education. However, concern was expressed that the limited resources available to such organizations are limiting the expansion of existing partnerships or the development of new ones.

4.3 Required Mechanisms

The following questions were posed to all participant groups to ascertain their views with respect to the mechanisms that are required in order to ensure the future viability of the AEP.

5. "Is it important to have the roles and responsibilities of the AEP defined formally (legislation)?"
6. "What attributes or flexibilities are most important for the future delivery structure of the AEP?"

The following section documents the responses to these questions.

Highlights

- Participants endorsed the need for a clear mandate for the AEP. A majority of participants favoured a legislated approach provided that it is sufficiently flexible to enable the AEP to adapt to new issues and requirements. As one participant stated, without legislation, "you respond to the winds and the waves like a captain without a compass."
- Without legislation, "you respond to the winds and the waves like a captain without a compass."
- A number of characteristics were suggested for a renewed mandate. These included: definition of the public good focus and responsibilities of the AEP; clarification of the AEP's commercial involvement; a commitment to data monitoring and archiving; and the formal identification of the AEP as the official source for issue of warnings of hazardous weather to the public.
 - Participants also identified a number of desirable attributes and flexibilities that the Program should exhibit in the future. Examples of these included: the ability to partner effectively; a clear mandate; staffing and compensation flexibilities; a strong scientific base; financial flexibility; and client responsiveness.

4.3.1 General Participant Responses

The following section documents the responses of general session participants to questions of mandate and required attributes and flexibilities of the organization.

Mandate

There was significant debate among general session participants regarding the proper structure and content of a renewed mandate for the AEP. This debate is outlined below.

Legislated Mandate

While there was virtually unanimous agreement that the AEP needs a clear, long-term mandate with well-defined boundaries, participants did not all agree that the mandate needs to be based in legislation. The majority of participants supported the establishment of a legislated mandate for the AEP, in hopes that legislation would provide fiscal and organizational stability.

However, some participants were concerned that legislation might constrain the ability of the AEP to react to new or changing developments or issues while not necessarily providing increased stability. These participants would favour legislation only if the appropriate flexibilities could be incorporated in the

mandate. Others suggested that only parts of the mandate needed to be based in legislation, such as the public good activities of the AEP.

Finally, some participants were opposed outright to a legislated mandate, fearing that adequate flexibilities could not be incorporated in the mandate.

Content of the Mandate

Participants made a number of suggestions regarding the content of a renewed AEP mandate. In particular, a renewed AEP mandate should:

- define the public good responsibilities of the Program and clarify the extent to which the AEP should pursue commercial activities;
- be written in sufficiently general terms to permit the Program flexibility to adapt to new and unforeseen developments and issues;
- be adequately tax-based funded to deliver on the core services of the mandate;
- emphasize the provision of services in support of the safety and security of the public;
- formally designate the AEP as the single official voice for warnings of hazardous weather to the general public. It was also suggested that there be a legislated requirement for immediate dissemination of these warnings by media outlets;
- commit the Program to atmospheric and related research;
- include the responsibility for the maintenance of a national data archive for atmospheric and water data; and
- commit the Program to monitoring data.

Attributes/Flexibilities

Participants in general consultation sessions identified a substantial list of desirable attributes and flexibilities for a renewed Atmospheric Environment Program.

In the majority of sessions, the following attributes were explicitly identified as being important to the future success of the Program:

- The AEP should be able to partner effectively with private and public sector organizations including closer liaisons with universities and other learning institutions;

- A clear, well-defined mandate;
- Should be an honest and responsive organization;
- Participants stressed that the federal government should provide adequate funding for core activities. One participant wondered, "How they ever allowed all this money to be taken from AEP's budget is a puzzle.";
- The AEP should be credible. This involves being neutral and a leader in its field;
- Responsible for national standards;
- The AEP should be a science based organization, with scientific independence for political influence; and
- The AEP requires staffing and compensation flexibility. For example, the AEP should be able to offer adequate compensation packages and offer career progression opportunities and staff mobility. Secondment opportunities with external organizations should also be explored.

"How they ever allowed all this money to be taken from AEP's budget is a puzzle."

During four or fewer sessions, participants also identified the following attributes and flexibilities:

- Efficiency - the AEP should be able to perform its mandate within its allotted budget;
- A commitment to investment in technology to modernize the infrastructure as needed;
- An emphasis on maintenance of international linkages and the provision of an international leadership profile;
- A commitment to public education and outreach activities, including the ability to promote the economic value of weather information;
- A business-like management regime, such as a Board of Directors or Joint Advisory Committee;
- Greater accessibility to the public and clients with regard to outputs and services;
- There should be a public good focus;
- The organization needs to be stable because its concerns are long-term by their nature;
- The organization should promote professional development including in-house training to ensure consistency in the workforce across the country. Participants noted that universities cannot currently provide operational training, but only theory;
- The AEP should have greater visibility as an organization;
- Financial flexibility, such as the ability to carry forward funds;
- An internal and external performance measurement system;
- A local AEP presence in communities;
- An organization that promotes consultation and communication of goals and results, both internally and externally;
- A transparent accounting system;
- An Ombudsman; and

- Respect for cultural diversity.

4.3.2 Provincial/Territorial Responses

The following presents a synthesis of responses provided by provincial/territorial session participants.

Mandate

Provincial/Territorial participants were virtually unanimous in their view that the AEP needs a clearly defined, long-term mandate. However, there was some disagreement regarding the need to legislate the mandate. This debate is outlined below.

Legislated Mandate

The majority of session participants supported the establishment of a legislated mandate for the AEP. One participant expressed that it was critical that the mandate of the AEP be clearly defined in legislation to chart its direction, for "otherwise you respond to the winds and the waves like a captain without a compass."

Without legislation,
"you respond to the
winds and the waves
like a captain without a
compass."

Other participants indicated that they would only support a legislated approach if the mandate contained sufficient flexibilities to permit the AEP to adapt to new realities. Some participants also doubted that a legislated mandate would necessarily be accompanied by the funding needed to deliver its obligations.

Finally, a few participants uniformly opposed legislation. It was felt that the desire for legislation is coming from the private sector in an effort to ensure that the AEP avoid activity in the marketplace. They felt that legislation would be too restrictive and would not guarantee adequate funding.

Content of the Mandate

Participants made a number of suggestions regarding the content of a renewed AEP mandate. It was felt that a renewed AEP mandate should:

- establish the AEP as the single official voice for warnings of hazardous weather;
- define clear program roles and responsibilities;
- ensure that public good and safety issues are the AEP's top priority;
- include adequate flexibility to adapt to changing circumstances;
- commit the AEP to providing monitoring standards; and
- clearly define the hydrological responsibilities of the AEP.

Attributes/Flexibilities

Provincial and territorial participants identified a number of attributes and flexibilities that they considered important to the future success of a renewed Atmospheric Environment Program.

The following attributes were identified during the majority of sessions:

- The AEP should be able to partner effectively with private and public sector organizations including closer liaisons with universities and other learning institutions;
- A clear, well-defined mandate;
- Financial flexibility, such as the ability to carry forward funds;
- The AEP should be a science based organization, with scientific independence for political influence;
- The AEP requires staffing and compensation flexibility. For example, the AEP should be able to offer adequate compensation packages and offer career progression opportunities and staff mobility. Secondment opportunities with external organizations should also be explored; and
- The AEP should be client oriented and offer personalized service.

During four or fewer sessions, participants also identified the following attributes and flexibilities:

- The AEP should be a current, high quality, research and technology oriented organization;
- A more business-like approach with local employees empowered to undertake initiatives with less red-tape and management levels;
- An increased emphasis on coordination; and
- An emphasis on maintenance of international linkages and the provision of an international leadership profile.

4.3.3 Federal Government Responses

The following presents a synthesis of responses provided by other federal government representatives.

Mandate

Federal participants stated that there is a need for a clearly defined mandate. Also, participants identified a need to ensure the mandate does not limit the AEP's ability to respond to change. It was also pointed out that a legislated mandate could provide stability both internally and for partners.

Attributes/Flexibilities

Federal departments' representatives identified the following attributes and flexibilities as desirable for a future AEP:

- Effective/defensible cost recovery policy which considers things such as joint programs and in kind contributions;
- The ability to attract and retain professional staff, without undue regulations by: paying competitive salaries; providing an intellectually stimulating environment with variety; opportunities for career advancement; international involvement; and an educational leave program;
- Organizational stability. It was noted that stability is also important to forming alliances;

- The maintenance of infrastructure by capital investment. It was suggested that this responsibility should be given to professionals or possibly outsourced. Participants observed that systematic measurement of the environment has been downgraded over time. "The national observing network is necessary and needs to be funded through tax-based revenues but the money for remote stations is not there...this is not just a Canadian problem." Regarding sharing the cost of the infrastructure, participants were of the view that if a partner is making a profit, there should be a method to let AEP share this.;
- The establishment of exchange programs with industry and with international organizations. It was noted that the latter is happening already but needs to be bolstered;
- A professional approach to managing;
- Ongoing assessment of the benefits of advancements (e.g. in modeling);
- Financial flexibilities; and
- Focus on importance of service, not "sexiness" of service, when allocating resources or new services.

"The national observing network is necessary and needs to be funded through tax-based revenues but the money for remote stations is not there...this is not just a Canadian problem."

4.3.4 Staff Responses

The following summarizes views expressed by Environment Canada staff.

Mandate

Staff participants expressed a virtually unanimous desire for a clear, well-defined mandate. However, there was considerable debate regarding the need to define it formally. This discussion is outlined below.

Legislated Mandate

The majority of participants fully endorsed the need for a legislated mandate for the AEP. It was generally agreed that this would provide a more stable and consistent program, which would allow the AEP to do more long-term planning. Moreover, by clearly defining roles for management and staff, morale would be improved. It was also felt that legislation would help stabilize funding and clarify international obligations.

Other participants indicated that they would only support legislation if flexibility in the mandate could be provided to allow the AEP to respond to emerging issues.

Finally, some participants did not support the legislated approach at all, for fear that the mandate would become too restrictive.

Content of the Mandate

Participants made a number of suggestions regarding the content of a renewed AEP mandate. In particular, a renewed AEP mandate should:

- include sufficient flexibility to permit the AEP to adapt to changing requirements and respond to new issues;
- establish the AEP as the single official voice for warnings of hazardous weather conditions;
- require the media to disseminate weather warnings in a timely manner;
- define public good and commercial services and clarify the AEP's responsibilities in these areas;
- define clear program boundaries for the AEP;
- guarantee adequate funding for mandated programs including research and climatology;
- include responsibility for data collection and archiving for atmospheric, ice and water data;
- include responsibility for the establishment and enforcement of national standards for atmospheric, water and ice data and services;
- include the AEP's international commitments;
- include a revision clause or mechanism;
- facilitate copyright of AEP products; and
- include responsibility for the provision of aviation weather services.

Attributes/Flexibilities

Staff who attended consultation sessions identified a substantial number of attributes and flexibilities that they considered should be associated with a renewed Atmospheric Environment Program.

The following attributes were uniformly supported in the majority of sessions:

- The AEP requires staffing and compensation flexibility. For example, the AEP should be able to offer adequate compensation packages and offer career progression opportunities and staff mobility. Secondment opportunities with external organizations should also be explored;
- Financial flexibility, such as the ability to carry forward funds;
- The AEP should be a science based organization, with scientific independence from political influence;
- A clear, well-defined mandate;

- A coherent national program that promotes and enhances consistency of services and products;
- The AEP should have greater visibility as an organization.
- The organization should promote professional development and training to ensure consistency in the workforce across the country.
- The AEP should be able to partner effectively with private and public sector organizations including closer liaisons with universities and other learning institutions; and
- Staff recognition.

The following additional attributes received uniform endorsement during eleven or fewer sessions:

- A commitment to investment in technology to modernize the infrastructure as needed;
- Should be an honest and responsive organization;
- The AEP should be credible. This involves being neutral and a leader in its field;
- An internal and external performance measurement system;
- Adequate funding
- A more business-like approach with the ability to invest in its own future, market its own products and procure its own services;
- The organization needs to be stable because its concerns are long-term by their nature;
- An organization that promotes consultation and communication of goals and results, both internally and externally;
- A transparent cost accounting system;
- Leadership to provide direction to employees;
- Local flexibility to tailor services to client needs;
- An emphasis on maintenance of international linkages and the provision of an international leadership profile; and
- Maintenance of linkages with Environment Canada.

5 Focus Group Findings

5.1 Introduction

This section documents the views expressed by participants in the six focus groups that were held with members of the general public. The focus groups addressed the following four main objectives:

- identify the importance of, and needs for, weather information on the part of members of the general public;
- gauge the general public's perceptions regarding the role of the federal government in relation to weather information, and reaction to private sector involvement (including willingness to pay for weather information);
- assess the general public's views towards the AEP's involvement in the marketplace; and
- identify mechanisms or alternatives to improve AEP programs and services.

Prior research done for Environment Canada suggested that the general public does not, in general, have significant knowledge of the various programs, services and activities of the AEP, above and beyond general weather forecast information. For this reason, rather than confusing participants and asking for comments in areas in which they likely had little prior knowledge, the discussion centered on weather information services. The outcomes of these sessions are presented in the following.

5.2 Highlights

This section of the report presents an overview of the key themes that emerged from the focus groups. While the number of focus groups conducted was limited and the opinions expressed in them were not necessarily representative of the views of the public from across the country, participants expressed key messages which are important additions to the information already collected through the conduct of the ASD study.

- Participants were **generally unaware of the various weather services** provided by the AEP. AEP was not well known to participants, and they more easily referred to Environment Canada, which they generally associated with the Weather Channel or weather information distributed through various media.

- The majority of participants in all focus groups viewed **meteorological services as important, particularly with respect to ensuring public safety**. However, they did mention that the relative importance of weather information and services would vary for different people, based on the extent to which these people relied on the information. For example, knowing the probability of precipitation would be more important for someone working outside than for someone who needs to know whether or not to carry an umbrella on a particular day.
- Temperature, the probability of precipitation (POP), information on the wind chill and the UV index were the pieces of information that participants most frequently mentioned as being important.
- Many participants specified that weather information was more important to them in the winter, given the potentially more serious impacts that bad weather can have in this season than in others. The majority of participants also believed that **information on extreme and severe weather conditions was important or critically important**.
- **Accuracy of information was important** to participants but many believed that a range in accuracy was acceptable. There was no consensus on how accurate forecasts currently were, even though the general sense was that forecasts were accurate enough to meet the needs of the general population. Accuracy was felt to be most important for people who relied on forecasts to make decisions that had an impact on their livelihoods or their health.
- Participants strongly felt that **weather information and services should be provided for free** since they felt they were already paying for them, either through taxes, newspaper prices or cable subscriber fees. A number of participants, however, did feel that it would be fair to have people **pay for specific or detailed information, or for information from which a business might profit**.
- While many people saw a role for the federal government in terms of weather information and services, all participants did not agree on what the extent of this involvement should be. Some said they did not care who the provider was as long as the information was accurate. However, **a number of concerns were expressed regarding the involvement of the private sector in this area**, especially because they saw the private sector as being driven by profits. Specifically, participants stressed that **accuracy of, and national access to, information as well as safety should not be compromised**. They therefore felt that the federal government, under such a scenario, should be responsible for the establishment of standards to which the private sector would have to adhere.
- Participants generally supported the participation of Environment Canada in the market place, especially if this allowed the Department to continue to provide basic weather services to the general population. However, they did specify that **participation in the marketplace should be under certain conditions**, such as fairness of competition.
- Participants had few suggestions for the improvement of AEP programs and services, given their low level of awareness of what the AEP does. Nevertheless, this led them to suggest that **Environment Canada should more actively communicate** its activities to increase the level of awareness of the general population.

Focus group participants did not generally include individuals who relied heavily on weather information (e.g., construction workers). This enabled the discussion to focus on broad views of the general public. In

addition, it should be noted that no focus groups were conducted in rural or remote areas. Therefore, the views of these segments of the population are not necessarily reflected in the comments of the focus group participants.

5.3 Participants' Recognition and Understanding of AEP

There was a general level of uncertainty regarding what participants associated with the AEP, or more generally with Environment Canada, as far as weather was concerned. When asked to identify the weather services associated with Environment Canada, one participant mentioned that she had never associated Environment Canada with the weather, only with recycling and waste management. In response to the question of what weather services people associated with Environment Canada, many participants indicated that they associated the Department's meteorological services with the weather information provided through the media (e.g., radio, newspapers, community television). Other information and services which participants associated with Environment Canada included the following:

- air quality index;
- airport traffic (weather information for airports to manage aircraft);
- infrastructure (e.g., large towers, satellites);
- marine forecasts;
- internet-based weather information;
- archiving of historical data;
- information on tornadoes;
- telephone weather service (Vista 350);
- *the weather channel network on television;*
- *pollen index;*
- *ski reports; and*
- *road conditions.*

It is important to stress that some of the above services (in *italics*) are in fact not provided by Environment Canada, despite the impressions that participants may have had. This highlights the lack of knowledge of the general population concerning the involvement of Environment Canada with weather services. Nevertheless, participants in Toronto seemed to be somewhat more knowledgeable of the services provided by Environment Canada than participants in the other sessions. For example, they associated weather

reports with the Department. Two participants in this group specifically mentioned Internet weather services.

5.4 The Importance of Weather Information

Participants in the focus groups were asked to identify specific pieces of meteorological information of importance to them. Because a list of the weather services provided by Environment Canada was not submitted to participants, some of the information and services that they identified as being important are actually not provided by Environment Canada.

Participants identified a number of services and pieces of information, but specified that these had varying importance for different people and at different times of the year. For example, it was felt that people whose business activities or livelihood was affected by the weather (e.g., farmers, fishers, landscaping), which was the case for a few participants, would find weather services more important than the average person. It was felt that people with health problems who could be affected by the weather (e.g., people with allergies, with pulmonary conditions) would also find some of the weather information more important than the general population. "Each and every one of those [pieces of information] is important to certain people for certain things. I don't think you could wipe any of them out."

"Each and every one of those [pieces of information] is important to certain people for certain things. I don't think you could wipe any of them out."

While some participants referred to severe weather warnings, others discussed extreme conditions or sudden changes in conditions. Regardless of the terminology used, the majority of participants indicated that information related to these types of conditions was particularly important because of the safety implications that such warnings can have. For example, one participant mentioned that she would want to know whether a tornado was expected before going sailing on a lake. While extreme weather situations are not daily occurrences, participants felt it was important that on those occasions when warnings were issued, that the population was informed in a timely manner.

In general, participants said they used the weather services to help them plan activities (both leisure and business), make travel plans and determine how they should dress on a given day. Relying on weather information to plan outdoor activities was particularly prevalent in the Vancouver focus group, given the important role these activities play for people in this region. Knowing about the freezing level was

particularly important to these participants. A number of participants in all groups indicated that weather information, especially that related to temperature, was more critical in the winter time. For example, participants in the Halifax focus group said that wind was a piece of information whose importance increased in the winter because it has an impact on temperature.

The majority of participants reported that they used daily forecasts in some way or another. Information on temperature, severe weather warnings, the probability of precipitation, the UV index and wind (including wind-chill) was the information most frequently mentioned as being important to participants. Participants were asked to rate the relative importance of the information that they viewed as having importance to them, from critical to important to nice to have. The relative importance of the various pieces of information identified above varied somewhat from group to group but generally, the following trends emerged:

- severe weather warnings were viewed as being important to critical;
- temperature was viewed as being important to critical;
- the probability of precipitation and wind (including wind-chill) were viewed as being important; and
- the UV index was viewed as being nice to have.

Participants also identified the following information as having importance, although this information was mentioned less frequently across the six groups than the information identified above:

- air quality (generally viewed as being important);
- pollen levels (no consensus on importance);
- barometric pressure (important to nice to have);
- cloud coverage (nice to have); and
- humidity index (important to nice to have).

Other services that were mentioned by only a few participants and not rated by most of the groups included the following:

- long-range forecasts;
- specific forecasts (e.g., marine forecasts);
- visibility/fog;

- forest fire warnings;
- light conditions;
- e-coli count in the water;
- ice conditions;
- road conditions;
- pollution; and
- dryness index.

It is interesting to note that participants in Vancouver identified a much greater range of information that they felt to be important than participants in the other groups.

Information on extreme weather conditions, such as blizzard and tornado warnings, were particularly important for participants in Regina, even though the majority of participants in all groups believed that information on extreme weather conditions was important. One participant mentioned that this information was "especially important now because weather conditions are changing so much in the world. Natural disasters cause upheaval in people's lives." A number of participants in the Toronto focus group also expressed specific concerns about the effect of smog and UV rays on their own health.

Information on extreme weather conditions is "especially important now because weather conditions are changing so much in the world. Natural disasters cause upheaval in people's lives."

Participants in other groups also indicated that smog and UV information would be important information for people with health problems.

Participants identified a few pieces of information that they sometimes attempted to find or desired but felt were not readily available. It is important to note that comments on this issue reflected participants' impressions and did not necessarily reflect whether the information was actually available or not. These included the following:

- information regarding weather conditions in other locations;
- accurate local weather information (participants felt that weather information for Regina should come from Regina, not Winnipeg. Also, participants indicated that the weather patterns often varied significantly within a given location, therefore information related to a particular geographic location within an area was not always relevant to other locations within that area);
- more frequent local weather information. One participant said, "I don't think they give as much weather locally as we get from across the country.";

- information on road conditions;
- detailed information (e.g., light versus heavy rain);
- meaning behind the information (e.g., forecasts, UV index);
- forecasts for lightning strikes; and
- amount of precipitation anticipated, particularly in the summer.

"I don't think they give as much weather locally as we get from across the country."

5.4.1 Sources of Information

The sources of information which participants said they most commonly used to obtain weather-related information included the television, newspapers and radio. Many of the participants who identified the television as a source of information specifically mentioned the weather channel, however the general news was also mentioned. A few participants also mentioned the Internet, the Farmer's Almanac, outdoor thermometers and outdoor electronic bulletin boards as sources of information. Informal networks (e.g., calling family and friends in other parts of the country), Environment Canada's 1-900 line (for detailed information) and airports were also mentioned.

5.4.2 Accuracy of Information

Focus group participants generally indicated that accuracy in forecasts was important to them. "You need to know whether you can plan to go out or not." However, some also acknowledged that 100% accurate forecasts are difficult to provide, especially in areas where the weather can change very suddenly. They added that a range in terms of accuracy was acceptable (e.g., a few degrees off in temperature). Participants stated that the importance of accurate forecasts varied depending on the individual using it (e.g., individuals who rely on the forecasts to make business or livelihood decisions, those with health problems that are affected by the weather and those planning activities such as vacations). "A few degrees here and there is not going to bother me. It's a lot more difficult to be accurate in the forecast for a day or two but that is where I like to see accuracy."

"You need to know whether you can plan to go out or not."

"A few degrees here and there is not going to bother me. It's a lot more difficult to be accurate in the forecast for a day or two but that is where I like to see accuracy."

To some participants, accuracy was particularly important when forecasting severe weather and extreme temperature, and as it relates to road conditions, since such events and conditions may affect personal safety.

There was no consensus on how accurate participants felt weather forecasts currently were. Some believed that accuracy had improved over the last few years while others believed the opposite. A few participants in Regina felt that the forecasts for their city were not as accurate as they could be because the office providing the information is located in Winnipeg.

5.5 Role of the Federal Government and the Private Sector

This sub-section provides information on participants' views regarding the role of the federal government and of the private sector in the provision of weather services, and on the willingness of participants to pay for weather services.

5.5.1 Role of the Federal Government

Participants provided a mix of views on the issue of the role of the federal government in the collection of weather-related data, and the development of forecasts. To some participants, the source of the information - whether it be the government or the private sector - did not really matter, as long as the information they received was accurate. "I'm just interested in the most accurate forecasting and if the private sector can provide that, then sure." Many others felt that the involvement of the federal government ensured that standards regarding the accuracy of the information were in place, and that the information was delivered for free on a national scale. A few participants also felt that the federal government probably had an extensive infrastructure already in place to collect data and that the need to establish such an infrastructure would probably discourage anyone else from entering that field.

"I'm just interested in the most accurate forecasting and if the private sector can provide that, then sure."

A few believed that handing the collection and delivery of weather-related information and services to a private company would allow the government to save money, savings which could be applied elsewhere (e.g., on reducing the deficit). Others were concerned about duplication and felt that the services of the

"It would be revenue-based accuracy. The more accurate you are, the more revenue you make."

federal government might not be needed in areas where these services were already being provided by the private sector (e.g., the weather channel). Some participants believed that a private company would be more efficient and accurate than the federal government, and that competition would result in the use of the best available equipment and technology. "It would be revenue-based accuracy. The more accurate you are, the more revenue you make."

5.5.2 Role of the Private Sector

A number of participants expressed concerns about the involvement of the private sector in the collection and delivery of weather-related information. One such concern was that the level of service would be reduced, since a private company would be solely focused on generating profits. "It would always be about the almighty dollar. That's all it would be about." For example, participants were concerned that all areas of the country would not be served equally. "Outlying areas would be especially affected in what they could get. The private sector would be looking to make a profit and that would be in larger centres. Outlying centres would be discriminated against." It was felt that people living in rural and remote areas might not receive the same level of service as those living in more urban areas, or that general information on the environment (e.g., ozone layer) might be neglected.

"It would always be about the almighty dollar. That's all it would be about."

"Outlying areas would be especially affected in what they could get. The private sector would be looking to make a profit and that would be in larger centres. Outlying centres would be discriminated against."

A number of participants were also concerned about ensuring the safety of citizens, and believed that safety might be compromised if a private sector company was responsible for weather information forecasting services. "[We] don't want to see anything that concerns safety compromised by deregulation."

"[We] don't want to see anything that concerns safety compromised by deregulation."

Some participants stressed that if a private company were responsible for weather services, then standards had to be in place to ensure that all Canadian citizens had access to the same basic level of information, that forecasts were reliable and accurate, and that public safety was not compromised. A few added that under such a scenario, the private sector company would have to be held accountable in case a weather forecast proved to be inaccurate and compromised safety. Some also stressed the importance of services being delivered by a Canadian company. "I think it should be

"I think it should be Canadian people. Don't bring some outsider to read our weather. We have enough brains, technology and know-how to do it here."

Canadian people. Don't bring some outsider to read our weather. We have enough brains, technology and know-how to do it here."

5.5.3 Willingness to Pay for Services

The majority of participants felt that weather-related information should be provided to them for free. They felt that they were already paying for the information one way or another (i.e., by paying taxes, buying newspapers or subscribing to cable). They also mentioned that if the media were already paying for the information and consumers were also paying for it though cable subscription fees, for example, they should not have to pay again to obtain basic weather information.

Below are selected participant comments:

- "I think it's like paying double. We are already paying for it in our taxes, why should we have to pay on top of that? It should be free for everyone.";
- "We need to know the weather. A lot of people depend on it. If you depend on the weather and have to pay for it, it just doesn't seem right.";
- "There shouldn't even be a question of whether or not we should pay to get weather forecasts or have to use 1-900 to get privileged information that I believe should rightly come to us."; and
- "I would never call a 1-900 number to get weather information."

"I think it's like paying double. We are already paying for it in our taxes, why should we have to pay on top of that?"

If you depend on the weather and have to pay for it, it just doesn't seem right."

"I would never call a 1-900 number to get weather information."

Participants in Vancouver were particularly concerned about the issue of safety.

They believed that if people were asked to pay for weather services, they might simply ignore the weather and risk their safety, given the great amount of time that they spend outdoors. Other participants were also concerned about paying twice for weather services, as both a taxpayer and a consumer. In Toronto specifically, the majority of participants indicated that legislation needed to be developed to clearly define Environment Canada's role and mandate in weather information services.

Most participants indicated that in the event they were asked to pay for weather services they would refuse to and would find another way to find out the information they needed (e.g., use a thermometer, rely on their own interpretation, guess the UV index from how sunny it was outside).

This was particularly true if the information was not perceived as important.

"It's not like I just can't stick my head out the door."

"It's not like I just can't stick my head out the door."

However, some added that they might pay for weather-related information and services on a pay-per-use basis in very specific situations, such as when planning a trip or when concerned about safety (e.g., to obtain information on severe and extreme weather conditions, or marine information). Others mentioned that it would be fair to ask people to pay for very specific or detailed information. Participants also thought it would be fair to charge businesses who required information in order to make a profit. "If you really require detailed synopsis in forecasting to make a profit and you're a business [...] why should average Joe pay for it?"

"If you really require detailed synopsis in forecasting to make a profit and you're a business [...] why should average Joe pay for it?"

5.6 Federal Government Involvement in the Marketplace

This sub-section discusses information related to the participation of the federal government in the market place and competition with the private sector.

5.6.1 Involvement in the Marketplace

Participants were generally supportive of the idea of Environment Canada competing with the private sector for the provision of meteorological services and indicated that "Competition, in general, is healthy." This particularly held true if this allowed the Department to generate revenues that would allow it to continue to provide basic services to the Canadian population. "If Environment Canada has to raise revenues in order to provide the service to Canadians while keeping a core level of services, then they should do that. They have a responsibility to provide weather information to Canadians so people can base decisions on what they are going to do."

Competition, in general, is healthy."

A few participants indicated that market forces would determine if Environment Canada were able to compete in the marketplace. If they were not able to compete effectively, they would then be driven out of the marketplace. The general sentiment was to go ahead and try to compete, but if the marketplace was not supportive, then this was not something that Environment Canada should be doing.

"If Environment Canada has to raise revenues in order to provide the service to Canadians while keeping a core level of services, then they should do that. They have a responsibility to provide weather information to Canadians so people can base decisions on what they are going to do."

Participants provided suggestions as to how they thought Environment Canada could generate revenues, including establishing a weather channel and generating advertising revenues, implementing a user fee system for specialized services and targeting specific segments of the population (e.g., skiers), and raising the prices it currently charges to users. Some participants specified that Environment Canada should be careful to not under-charge for services (i.e., incorporate a reasonable profit margin in its fees).

5.6.2 Competing with the Private Sector

Some participants made stipulations regarding what they thought should be the level of involvement of Environment Canada in the marketplace. Some, for example, specified that the federal government should be allowed to compete with the private sector only for the delivery of specialized information and services when the playing field was level (i.e., the government did not have an unfair advantage over the competition). A few mentioned that the government should not actively bid on commercial projects.

5.7 Suggestions to Improve AEP Programs and Services

When asked whether they had any suggestions concerning how Environment Canada could improve the delivery of its weather program, many participants found the question difficult to answer given their low level of awareness of current programs and services. This led a number of participants to suggest that Environment Canada should better inform the public about its role and

"Everybody in this room talks about the weather every day, but nobody talks about Environment Canada. They must make people know [about what they do]."

activities in providing weather-related information and services. "Everybody in this room talks about the weather every day, but nobody talks about Environment Canada. They must make people know [about what they do]." This is an important point to remember given the uncertainty surrounding the weather services which participants associated with Environment Canada and which was assessed at the beginning of the focus group discussions.

Some participants also felt it should take on a broader public education role (e.g., explaining what the UV index is and what it means). Participants in Regina specifically suggested that services could be more accurate and updated regularly.

6 Moving Forward

It was clear from the national consultation sessions that participants felt that AEP needed to play a critical role in a number of areas. These areas of involvement include data collection, quality assurance, archiving and access, public forecasting, provision of hazardous weather warnings, provision of scientific expertise and development of national standards. Many participants also indicated that AEP should withdraw from providing services available from other sectors and jurisdictions. Many participants from the private sector also felt that the AEP should stop providing commercial services.

The majority of participants expressed strong support for a public good oriented service organization that would have sufficient ongoing tax-based funding. For those participants that felt the AEP should continue to be involved in commercial activities there was a desire for a costing system that would help ensure that public monies did not go to supporting these initiatives. There was also a belief expressed by many participants that there could be benefits to be achieved through the expansion of partnerships and alliances.

There was strong support for a clear mandate that, if legislated, would require sufficient flexibilities to ensure the organization could adapt to emerging environmental issues. Participants also identified several desirable attributes that the Program should exhibit in the future including, but not limited to: ability to partner effectively; financial flexibility; a strong scientific base; and client responsiveness.

When considering some of the options available to the Program it will be important for senior decision makers to consider the views expressed by participants across the country. It is important to note that many stakeholders are expecting a significant change and are hoping that the change embraced by the Department contributes to a sustainable and stable organization. It will also Recognizing this, it will also be important to ensure that the decisions made regarding the Program are communicated effectively to all those that will be impacted. In this way the AEP can encourage the support of its important stakeholder groups through a time of challenge and on-going change.

Appendix A - Session Locations and Attendance

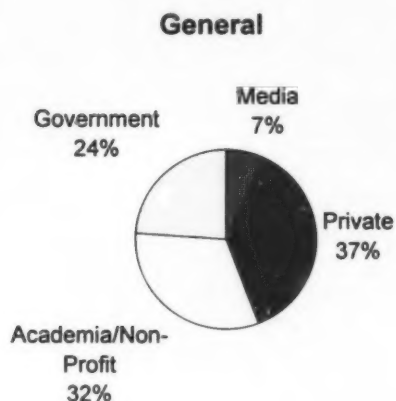
Fifty-six sessions were conducted at 21 locations across Canada. Thirty-nine percent or 22 of the 56 sessions were staff workshops. Twenty-one percent or 12 of the 56 sessions were provincial or territorial workshops. Twenty percent or 11¹ of the 56 sessions were general workshops. Eleven percent or 6 out of the 56 sessions were public focus groups. Nine percent or 5 out of 56 sessions were OGD workshops. The sessions, by location, are listed in the table below.

City	General	Provincial/Territorial	OGD	Staff	Public
Calgary	✓			✓	✓
Charlottetown		✓			
Edmonton		✓		✓	
Fredericton	✓	✓		✓	
Gander				✓	
Halifax	✓	✓		✓	✓
Kelowna				✓	
Montreal	✓			✓ (2)	✓
NCR	✓		✓ (5)	✓ (2)	
Quebec City		✓		✓	
Regina	✓	✓		✓	✓
Rimouski				✓	
Saskatoon				✓	
St. John's	✓	✓		✓	
Thunder Bay				✓	
Toronto	✓	✓		✓ (2)	✓
Vancouver	✓			✓	✓
Victoria		✓			
Whitehorse		✓		✓	
Winnipeg	✓	✓		✓	
Yellowknife	✓	✓		✓	

¹ A general session was held in Whitehorse where a single individual attended. The findings of this session were "rolled" into the Territorial session report and the number of sessions reported does not reflect this workshop.

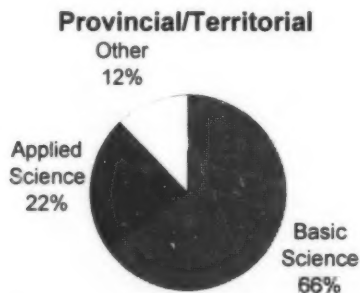
General

A total of 147 participants attended the 11 national general consultation sessions. Ten participants were from the media, while 55 others were from other areas of the private sector. Forty-seven were from non-profit or academic organizations with the remaining participants representing various levels of government.



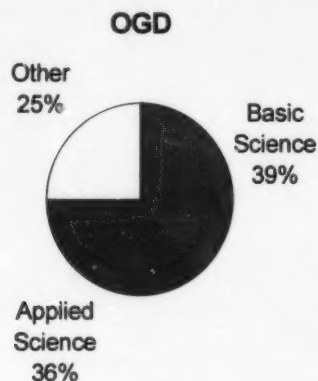
Provincial/Territorial

A total of 89 representatives attended the 12 national provincial/territorial consultation sessions. Fifty-eight of the representatives were from basic science organizations (e.g., Agriculture, Environment and Natural Resources) and 20 were from applied science organizations (e.g., Economic Development, Emergency Preparedness, Transportation and Utilities). The remaining representatives were from other ministries and organizations.



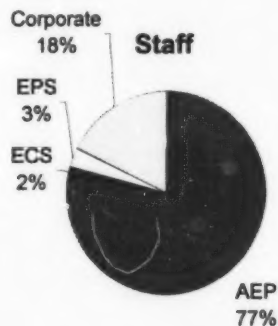
Other Government Departments

The 28 participants attending the five OGD sessions had similar distributions as those found within the provinces. Eleven were from basic science organizations, while ten were from applied science organizations. The remaining participants were from other departments and agencies.



Staff

A total of 674 staff attended the 22 national staff consultation sessions. 522 of the staff were from the AEP. The remaining 152 staff were from other parts of the Department. 20 were from Environmental Conservation, 12 were from Environmental Protection and 120 were from Corporate Services.



Public Focus Groups

A total of 55 participants attended the six public focus groups. Participants were recruited by randomly calling telephone numbers in the target areas. The participants represented a mix of ages and gender. As there were no focus groups conducted in rural or remote areas, it is not possible to assume that members of the general public in rural or remote areas would hold the same views as those expressed by participants in urban focus groups settings. Individuals who indicated that they relied heavily on weather information (e.g., construction companies) were deliberately excluded from the public focus groups. This was done to focus the discussion on the broad views of the general public, rather than on the very specific segments of the population.

Written Submissions

In addition to the input received through the consultation sessions, several individuals and groups brought forward written submissions to the national consultation process. Session participants contributed some, while individuals and group representatives that did not attend the sessions submitted others. Details on these submissions are contained in the compendium volume to this report.